FILE

L2 ANSWER 1 OF 2 MEDLINE
AN 94033729 MEDLINE
DN 94033729
TI **Particle bombardment**: a universal approach for gene transfer to cells and tissues.
AU **Klein T M**; Fitzpatrick-McElligott S
CS DuPont Agricultural Products, Experimental Station, Wilmington, Delaware 19880..
SO CURRENT OPINION IN BIOTECHNOLOGY, (1993 Oct) 4 (5) 583-90. Ref: 90
Journal code: A92. ISSN: 0958-1669.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS B
E

L2 ANSWER 1 OF 2 MEDLINE
AB In the past year, significant progress in the field of gene transfer has been made possible by refinement of the technique of **particle bombardment**. The process has been utilized for the study of gene expression in plastids and mitochondria, the production of transgenic crop plants and gene transfer into live animals. Bombarding tissues of live animals with genes that code for antigenic proteins may provide an effective means of vaccination.

FILE

L5 ANSWER 5 OF 8 MEDLINE
AN 95124254 MEDLINE
DN 95124254
TI Gene gun transfection of animal cells and **genetic immunization.**
AU **Johnston S A;** Tang D C
CS Department of Internal Medicine, University of Texas Southwestern Medical School, Dallas 75235.
SO METHODS IN CELL BIOLOGY, (1994) 43 Pt A 353-65. Ref: 27
Journal code: MV4. ISSN: 0091-679X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
E

L5 ANSWER 5 OF 8 MEDLINE
AB Gene gun technology at this point has the most utility in animal protein expression as a back-up technology. In other words, when other conventional systems fail, it will generally work. Most notable is its usefulness for hard-to-transfect cells or in some particular in situ applications. Improvements in the gun itself and in the microprojectiles present the potential for this technology to expand in utility. The one area in which it now appears to be the method of choice is **genetic immunization**.

FILE

L18 ANSWER 1 OF 2 MEDLINE
AN 95310070 MEDLINE
DN 95310070
TI Mouse embryo fibroblasts transformed by activated ras or dominant-negative **p53** express cross-reactive **tumor rejection antigens**.
AU Appleman L J; Uyeki J; Frey A B
CS Department of Cell Biology, New York University Medical Center, NY 10016, USA..
NC 5T32 GM07308 (NIGMS)
5T35 DK07421-13 (NIDDK)
CA 16087 (NCI)
SO INTERNATIONAL JOURNAL OF CANCER, (1995 Jun 9) 61 (6) 887-94.
Journal code: GQU. ISSN: 0020-7136.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199509

L18 ANSWER 1 OF 2 MEDLINE
AB To study the immune response against oncogene-transformed tumors, C3H/HcN mouse embryo fibroblasts (MEF) were transfected with an activated allele of the H-ras proto-oncogene VaII2 and a dominant-negative allele of the murine **p53** tumor suppressor gene VaII35. Transformed cell lines were derived and found to be tumorigenic in syngeneic mice. Immunization with irradiated **p53** + ras-transformed MEF, but not primary MEF or unrelated syngeneic cells, protected mice from subsequent challenge with live tumor cells. The role of different immune cell subsets in the effector phase of anti-tumor immunity induced by immunization with **p53** + ras-transformed MEF was investigated by in vivo antibody depletion experiments. Immunized mice depleted of CD8+ T, NK or B cells were resistant, but depletion of CD4+ T cells rendered mice susceptible to tumorigenic challenge. In contrast to the tumor-specific immune responses mounted against most chemically or UV-induced tumors, a series of independently derived **p53** + ras-transformed MEF were cross-reactive in tumor rejection assays. In addition, immunization with C3H-derived L-929 cell lines expressing single gene products H-ras or **p53** did not protect mice against tumorigenic challenge with **p53** + ras-transformed tumors. However, MEF transformed by expression of either H-ras or **p53** were cross-protective in vivo. Our data suggest that the **p53** + ras-transformed MEF share **tumor rejection antigens** which are also induced by single gene transformation of the parental primary cell but are not the products of oncogenic ras or **p53** protein.

FILE

L18 ANSWER 2 OF 2 MEDLINE
AN 94007346 MEDLINE
DN 94007346
TI Rat adenocarcinoma 13762 expresses **tumor rejection antigens** but **tumor**-bearing animals exhibit tumor-specific immunosuppression.
AU Frey A B; Appleman L J
CS Department of Cell Biology, New York University School of Medicine, New York 10016.
NC CA16087 (NCI)
SO7 RR5399-27 (NCRR)
RO1CA-57797 (NCI)
+
SO CLINICAL IMMUNOLOGY AND IMMUNOPATHOLOGY, (1993 Nov) 69 (2) 223-33.
Journal code: DEA. ISSN: 0090-1229.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199401

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L18 2 AB

L18 ANSWER 2 OF 2 MEDLINE
AB Rat adenocarcinoma 13762 was adapted to continuous growth in culture and used in a variety of experiments to investigate the immune response to inoculation of animals with replication-defective tumor cells. The results demonstrate that 13762 cells express **tumor**-specific **tumor rejection antigens** that elicit protective immunity to tumorigenic challenge. By several criteria there is no apparent humoral component of the anti-tumor immunity; however, anti-tumor immunity is characterized by nylon-wool nonadherent spleen T cells. Anti-tumor T cells demonstrate tumoricidal activity in local adoptive transfer assays and are not found in spleens of naive animals or animals immunized against either nontumorigenic Rat 1 cells or a syngeneic fibrosarcoma. Despite the expression of **tumor rejection antigens** 13762 **tumor**, and the demonstrable ability of injection of irradiated tumor to induce anti-tumor immunity, tumors elicited in unimmunized syngeneic animals grow progressively. The reasons for growth of antigenic tumor are unknown but are shown not to be due to defective antigen expression in 13762 tumor since, in addition to being able to elicit T cell immune response in immunized animals, 13762 tumor expresses MHC Class I molecules and can be a target for allogeneic T cell recognition in vitro. These data suggest that in tumor-bearing animals an effective anti-tumor immune response is either not initiated or down-regulated. Since animals bearing 13762 tumors can be immunized against an unrelated syngeneic sarcoma, can produce humoral responses to several protein antigens, and can produce delayed type hypersensitivity response against dinitrofluorobenzene, the immune response to 13762-induced tumors appears specifically suppressed. In support of this contention, 13762 cells express high levels of transforming growth factor beta 1 in vitro which is postulated to impact upon the nascent anti-tumor immune response.

FILE

L16 ANSWER 30 OF 30 MEDLINE
AN 95221901 MEDLINE
DN 95221901
TI Recognition of multiple epitopes in the human melanoma **antigen** gp100 by **tumor**-infiltrating T lymphocytes associated with in vivo tumor regression.
AU Kawakami Y; Eliyahu S; Jennings C; Sakaguchi K; Kang X; Southwood S; Robbins P F; Sette A; Appella E; Rosenberg S A
CS Surgery Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892, USA..
SO JOURNAL OF IMMUNOLOGY, (1995 Apr 15) 154 (8) 3961-8.
Journal code: IFB. ISSN: 0022-1767.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals; Cancer Journals
EM 199507

=> D
L16 30 AB

L16 ANSWER 30 OF 30 MEDLINE
AB Four of ten HLA-A2-restricted melanoma specific CTL that were derived from tumor-infiltrating lymphocytes (TIL) and administered to patients recognized the gp100 melanoma Ag and nine of ten recognized the MART-1 Ag. Adoptive transfer of the four gp100-reactive CTL, but not the other TIL, resulted in tumor regression when infused into autologous patients along with IL-2. Tumor regression was thus correlated with the recognition of gp100 by the administered T cells ($p = 0.0048$). To identify the epitopes recognized by these four gp100-reactive CTL, 169 peptides containing HLA-A2.1 binding motifs were synthesized and screened for their recognition by TIL using cytotoxicity and IFN-gamma release assays. Five gp100 epitopes (two for TIL620, three for TIL660, one for TIL1143, and two for TIL1200) were recognized by CTL derived from different patients. Five of eight HLA-A2 binding melanoma epitopes (five gp100, one MART-1/**Melan-A**, two tyrosinase) had intermediate binding affinity to HLA-A2.1. These gp100 epitopes may be responsible for mediating tumor rejection in vivo and thus may be useful for the development of immunotherapies for patients with melanoma.

FILE

L11 ANSWER 2 OF 2 MEDLINE
AN 94280772 MEDLINE
DN 94280772
TI Tumor antigens recognized by T lymphocytes.
AU Boon T; Cerottini J C; Van den Eynde B; van der Bruggen P; Van Pel A
CS Ludwig Institute for Cancer Research, Brussels, Belgium..
SO ANNUAL REVIEW OF IMMUNOLOGY, (1994) 12 337-65. Ref: 176
Journal code: ALO. ISSN: 0732-0582.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LA English
FS Priority Journals
E

L11 ANSWER 2 OF 2 MEDLINE
AB Transplantation experiments have demonstrated that most **mouse** tumors express antigens that can constitute targets for rejection responses mediated by syngeneic T lymphocytes. For human tumors, autologous cultures mixing tumor cells and blood lymphocytes or tumor-infiltrating lymphocytes have produced CD8+ and CD4+ cytolytic T cell (CTL) clones that recognize tumor cells specifically. Attempts to identify the target antigens by biochemical fractionation of tumor cells up to now have failed, with the important exception of the identification of underglycosylated mucins present on breast and pancreatic carcinomas. Gene transfection approaches have proved more successful. A gene family named MAGE codes for antigens recognized by autologous CTL on a melanoma tumor. These genes are not expressed in normal tissues except for testis. They are expressed in many tumors of several histological types. Differentiation antigens coded by genes such as tyrosinase are also recognized on human melanoma by autologous CTL. The identification of human **tumor rejection antigens** opens new possibilities for systematic approaches to the specific immune therapy of cancer.

FILE

L21 ANSWER 11 OF 32 MEDLINE
AN 95188447 MEDLINE
DN 95188447
TI **DNA**-mediated immunization and the energetic immune response to **hepatitis B** surface **antigen**
.
AU Whalen R G; Davis H L
CS Department of Molecular Biology, Pasteur Institute, Paris, France..
SO CLINICAL IMMUNOLOGY AND IMMUNOPATHOLOGY, (1995 Apr) 75 (1) 1-12.
Ref: 51
Journal code: DEA. ISSN: 0090-1229.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals; Cancer Journals
E

L21 ANSWER 11 OF 32 MEDLINE
AB A new and unusual approach for evoking an immune response has recently been introduced--that of **DNA**-based immunization. Purified plasmid **DNA**, containing protein coding sequences and the necessary regulatory elements to express them, can be introduced into tissues of the organism by means of a parenteral injection or by **particle bombardment**. The number of cells transfected and the amount of protein produced is sufficient to produce a remarkably strong and broad-based immune response to a wide variety of foreign proteins. The absence of an exogenous infectious agent or immunogen results in the abrupt appearance of a foreign protein within the normal cells of an immunologically mature and healthy animal and provokes an energetic and efficient reaction to this form of **antigen** presentation. This review summarizes the results obtained with the various experimental models that have been described to date and considers in greater depth the immune response to the surface **antigen** of the human **hepatitis B** virus that has been achieved using **DNA**-based immunization. Several issues are addressed in a prospective manner in order to anticipate some future developments and to point out topics likely to be pertinent to this field. **DNA**-mediated induction of immune responses may soon be applied as a form of therapeutic treatment. Although this method may constitute a revolution for vaccination, many issues must first be dealt with, especially concerning the safety of using **DNA** as an immunizing molecule.

FILE

L5 ANSWER 8 OF 8 MEDLINE
AN 92186961 MEDLINE
DN 92186961
TI **Genetic immunization** is a simple method for eliciting an immune response.
AU Tang D C; DeVit M; **Johnston S A**
CS Department of Medicine, University of Texas, Dallas 75235-8573..
SO NATURE, (1992 Mar 12) 356 (6365) 152-4.
Journal code: NSC. ISSN: 0028-0836.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
EM 199206

=> d l5 8 ab

L5 ANSWER 8 OF 8 MEDLINE
AB To produce an immune reaction against a foreign protein usually requires purification of that protein, which is then injected into an animal. The isolation of enough pure protein is time-consuming and sometimes difficult. Here we report that such a response can also be elicited by introducing the gene encoding a protein directly into the skin of mice. This is achieved using a hand-held form of the biolistic system which can propel DNA-coated gold microprojectiles directly into cells in the living animal. **Genetic immunization** may be time- and labour-saving in producing antibodies and may offer a unique method for vaccination.

FILE

L5 ANSWER 60 OF 91 MEDLINE
AN 94296659 MEDLINE
DN 94296659
TI Production of monoclonal antibodies by genetic immunization.
AU Barry M A; Barry M E; Johnston S A
CS University of Texas Southwestern Medical Center, Dallas.
SO BIOTECHNIQUES, (1994 Apr) 16 (4) 616-8, 620.
Journal code: AN3. ISSN: 0736-6205.
CY United States
DT Report; (TECHNICAL REPORT)
LA English
FS Priority Journals
E

L5 ANSWER 60 OF 91 MEDLINE
AB Genetic immunization is a simple method for producing polyclonal antibodies in mice. To test if this approach could be used for monoclonal antibody production, **biolistic** transfection was used to immunize a mouse. High levels of polyclonal antibodies against human growth hormone (hGH) were elicited following three inoculations with the gene for hGH. When hybridoma cells were created from the mouse's splenocytes, approximately 17% secreted antibodies vs. hGH. Of these, some recognized only native or denatured hGH, while most recognized both forms of the protein. These findings demonstrate the utility of genetic immunization as a method to produce monoclonal antibodies.

FILE

L5 ANSWER 61 OF 91 MEDLINE
AN 94253560 MEDLINE
DN 94253560
TI Generation of allo-reactive cytotoxic T lymphocytes by particle bombardment-mediated gene transfer.
AU Hui K M; Sabapathy T K; Oei A A; Chia T F
CS Laboratory of Molecular Immunology, National University of Singapore..
SO JOURNAL OF IMMUNOLOGICAL METHODS, (1994 May 16) 171 (2) 147-55. Journal code: IFE. ISSN: 0022-1759.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals; Cancer Journals
E

L5 ANSWER 61 OF 91 MEDLINE
AB Mature T lymphocytes comprise functionally distinct subsets with discrete roles in the regulation of the immune response. The cellular basis of the anti-tumor effect is now understood to involve the activation and expansion of tumor-specific cytotoxic T lymphocytes (CTL). To immuno-potentiate the generation of CTL, we have employed the **biolistic** system for the genetic immunization of mice. Here, we report the efficient generation of anti-H-2Kb allo-reactive CTL by particle acceleration-mediated genetic immunization of mouse spleen cells with H-2Kb DNA. The insertion and expression of exogenous gene into host spleen cells following in situ genetic inoculation to effect the generation of a cellular immune response may permit novel alternative strategies for immunotherapy.